

Claims

1. A method for modifying the acyltransferase (AT) domain in a first modular polyketide synthase (PKS) which method comprises:
excising by restriction enzyme reaction a first region encoding a first AT domain of a first PKS-encoding nucleic acid and inserting said excised first region into a region of a second PKS-encoding nucleic acid from which an AT domain-encoding region has been excised, to produce nucleic acid encoding a modified PKS.
2. The method of claim 1 wherein the first or second PKS is from *Saccharopolyspora erythraea*.
3. The method of claim 1 wherein the first or second PKS is from Streptomyces.
4. The method of claim 3 wherein the Streptomyces is *Streptomyces hygroscopicus*.
5. The method of claim 1 wherein the first PKS or second PKS is selected from the group consisting of erythromycin, rapamycin, avermectin, FK-506, and tylosin.
6. The method of claim 1 wherein the extender unit specificity of said first region is different from the extender unit specificity of the second region.
7. A method for modifying the AT domain in a first modular PKS which method comprises:
effecting *in vivo* recombination, wherein said recombination is from a donor plasmid comprising a first region encoding a first AT domain of a first PKS-encoding nucleic acid framed by a first pair of flanking sequences
into a recipient plasmid comprising a nucleic acid encoding a second PKS wherein in said recipient plasmid a second region encoding a second AT domain from a second PKS encoding nucleic acid is framed by a second pair of flanking sequences which are homologous to said first pair of flanking sequences, to produce nucleic acid encoding a modified PKS.

8. The method of claim 7 wherein said donor and recipient plasmids comprise different selectable markers.
9. The method of claim 7 wherein said donor plasmid is temperature sensitive.
10. The method of claim 7 wherein the first or second PKS is from *Saccharopolyspora erythraea*.
11. The method of claim 7 wherein the first or second PKS is from *Streptomyces*.
12. The method of claim 11 wherein the *Streptomyces* is *Streptomyces hygroscopicus*.
13. The method of claim 7 wherein the first PKS or second PKS is selected from the group consisting of erythromycin, rapamycin, avermectin, FK-506, and tylosin.
14. The method of claim 7 wherein the extender unit specificity of said first region is different from the extender unit specificity of the second region.
15. A recombinant vector which comprises the nucleic acid encoding said modified PKS produced by the method of claim 1.
16. A host cell transformed with the vector of claim 15.
17. The host cell of claim 16 wherein said cell is a bacterial cell.
18. The host cell of claim 17 wherein said bacterial cell is *E. coli*.
19. The host cell of claim 16 wherein said cell is a polyketide-producing organism.
20. The host cell of claim 19 wherein said polyketide-producing organism is a *Streptomyces*.

21. A method to produce a modified polyketide synthase which method comprises culturing the cells of claim 16.
22. A method to produce a polyketide which method comprises culturing the cells of claim 16.
23. A recombinant vector which comprises the nucleic acid encoding said modified PKS produced by the method of claim 7.
24. A host cell transformed with the vector of claim 23.
25. The host cell of claim 24 wherein said cell is a bacterial cell.
26. The host cell of claim 25 wherein said bacterial cell is *E. coli*.
27. The host cell of claim 24 wherein said cell is a polyketide-producing organism.
28. The host cell of claim 27 wherein said polyketide-producing organism is a *Streptomyces*.
29. A method to produce a modified polyketide synthase which method comprises culturing the cells of claim 24.
30. A method to produce a polyketide which method comprises culturing the cells of claim 24.